



Summary of Fishery Surveys Niebauer Springs, Price County, 2016

WDNR's Fisheries Management Team from Park Falls completed angling, gillnetting, and electrofishing surveys in 2016 to evaluate the longstanding trout stocking program in Niebauer Springs and to investigate reports of increasing largemouth bass abundance in the spring-fed pond.

Survey Effort

On July 5th, 2016 we set four variable mesh gillnets in the deepest portions of the pond and fished them for 3.5 hours (14 gillnet-hours). The spring-fed area was too shallow for gillnets. All gillnets were 150 feet long. Three nets had two 75-foot panels and one had three 50-foot panels. Mesh size of each panel ranged from 0.75-inch bar to 3.25-inch bar. We periodically checked the nets to minimize fish mortality.

To optimize our sampling effort on the same day we also fished when we were not tending gillnets. Beginning at 12:30 p.m., three experienced anglers fished from a small boat on Niebauer Springs for 2.75 hours (8.25 hours of angling effort). Of that total, 2.75 angler-hours focused primarily on trout and 5.5 angler hours focused on largemouth bass. We used spinning tackle with rubber worms and top-water baits for largemouth bass and small spinners for trout. The weather was partly cloudy and humid with air temperature in the 80's. All fish landed were measured and released.

On July 12th, 2016, after deciding we could launch our small electrofishing boat at a makeshift site, we completed a daytime electrofishing circuit of the entire shoreline plus a mid-lake circuit along the deeper weed edge for a total sampling effort of 0.96 miles in 0.42 hours. We targeted all gamefish and panfish species. Thick aquatic vegetation, the shallow shoreline, and low conductivity reduced our sampling efficiency in much of pond. Wearing polarized sunglasses, our single dip-netter seated on the bow saw many small fish dart away as the boat approached, seemingly unaffected by the electrical current. Amperage and fish capture efficiency increased near the springs.

Habitat Characteristics

Niebauer Springs is a 12-acre spring-fed impoundment located about 12 miles northwest of Phillips, WI. The pond and its surrounding public lands are managed for outdoor recreation as the 206-acre Niebauer Springs Fishery Area. On WDNR's internet page (titled "Lakes") maximum depth is listed as 8 feet, but the deepest spot we found was 5 feet. The pond's average depth was 3 feet. Dense stands of water lily and watershield covered about 75% of the surface area. Groundwater springs feed the pond at the south end and a "tin-whistle" outlet structure on the north shore controls pond level and discharge to the South Fork Flambeau River. We noted a surface water temperature gradient, ranging from 62°F near the

spring, 76°F at the outlet, and 81°F at the landing. However, the near-bottom water temperature at the outlet remained better suited for trout at 64.5°F. Water clarity was higher near the springs, steadily decreasing and becoming dark stained near the outlet. The bottom substrate was 30% sand, 30% gravel, and 40% muck. Niebauer Springs has no boat landing, but small boats can be easily launched from the dike. Most fishing activity probably takes place from shore or from a canoe in late spring and early summer before aquatic plants grow dense.

Summary of Results

We captured seven fish species in our surveys. Largemouth bass was the most common predator. We found yellow perch and pumpkinseeds in low abundance. Pumpkinseed and bass nests were visible near shore. Other forage included golden shiners and black bullheads.

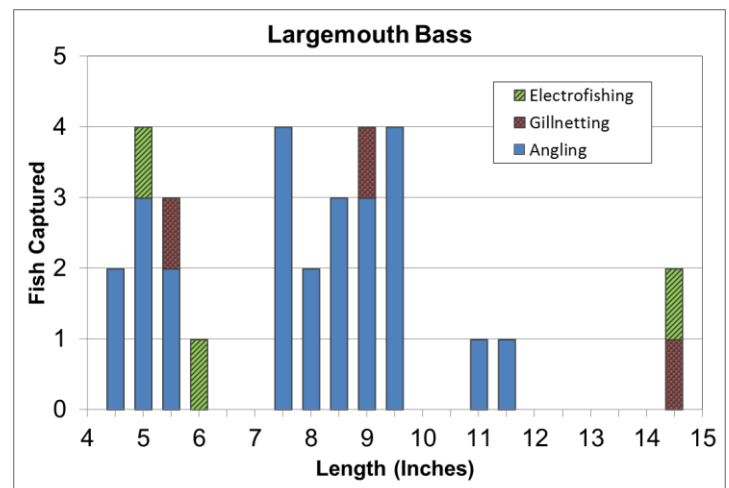
Brook Trout



We captured five brook trout by electrofishing and one by angling. They ranged from 8 to 11 inches long. We did not capture any trout in gillnets. All trout were captured in the south end of the pond where the water temperature, water clarity, and aquatic plants are influenced by groundwater. Each year WDNR stocks 300 – 400 yearling brook trout about 9 inches long to provide a put-and-take fishery in Niebauer Springs. Records show that this pond often received 750-1500 brook annually in 1972-2009 when trout fishing was thought to be more popular than it is now. Our catches show that stocked trout can survive the heat of early summer, providing anglers ample opportunity to harvest these fish after the season opens in early May. We suspect that localized conditions near the spring may allow year to year survival and growth of trout. An angler leaving the pond as we arrived reported catching two 13-inch brook trout on July 11th —fish considerably longer than the average stocked yearling. Anglers may keep five trout of any length daily. Though we cannot quantify the investment return, stocked brook trout are surviving, perhaps growing, catchable, and utilized in Niebauer Springs.

Largemouth Bass

Electrofishing, Gillnetting, Angling



Our recent surveys, particularly our angling survey, suggest that largemouth bass in moderately high abundance are dominant in the fish community. Angling captured largemouth bass at a very high rate (4.5 per hour of directed fishing effort) compared to the average rate (0.32 per hour) recorded in 515 creel surveys across Wisconsin's Ceded Territory from 1990 to 2015. Size structure was poor with most individuals less than 10 inches and only two legal-size bass 14 inches or longer. Largemouth bass are not desirable in a pond managed for trout fishing. Bass in Niebauer Springs likely originated from unauthorized stocking, or far less likely by upstream migration. Regardless of how and when they arrived, largemouth bass have taken advantage of the warmwater habitat that has developed, or perhaps was always present in this man-made impoundment. Bass and trout occupy thermally-segregated niches after the water warms in late spring, and both populations can continue to coexist here in their current status. While no practical intervention can influence groundwater discharge and resulting water temperature in the impoundment, periodically drawing the reservoir and maintaining the natural stream elevation over winter could serve to compact fine sediments, reduce aquatic vegetation, and kill or displace largemouth bass to reset the fish and plant communities and improve conditions for stocked trout and trout fishing. Status quo management offers catch-and-release bass angling diversity. Removing or relaxing the 14-inch minimum length limit could allow bass harvest, which is probably negligible now.

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